

Reithrodontomys gracilis. By Carole J. Young and J. Knox Jones, Jr.

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Reithrodontomys gracilis Allen and Chapman, 1897

Slender Harvest Mouse

Reithrodontomys mexicanus gracilis Allen and Chapman, 1897a: 9. Type locality Chichén-Itzá, Yucatán.

Reithrodontomys gracilis Allen and Chapman, 1897b:199, first use of current name combination (see also Howell, 1914:76).

Reithrodontomys pacificus Goodwin, 1932:2. Type locality Hda. California, 6 mi from [NE] Ocos, sea level, Guatemala.

Reithrodontomys harrisi Goodwin, 1945:2. Type locality Hda. Santa Maria, 3,200 ft, 18 mi NE Liberia, Guanacaste, Costa Rica.

CONTEXT AND CONTENT. Order Rodentia, Family Cricetidae (considered by some as a subfamily of Muridae), Subfamily Cricetinae. The genus contains two subgenera, *Reithrodontomys* and *Aporodon* (*R. gracilis* is a member of the latter and therein of the *R. mexicanus* group), and 19 currently recognized species. Hall (1981) and Spencer and Cameron (1982) provided keys to the species.

Five subspecies of *R. gracilis* presently are recognized, as follows:

R. g. anthonyi Goodwin, 1932:3. Type locality Sacapulas, 4,500 ft, El Quiché, Guatemala.

R. g. gracilis Allen and Chapman, 1897a:9, see above.

R. g. harrisi Goodwin, 1945:2, see above.

R. g. insularis Jones, 1964:123. Type locality 8 mi ENE Cuidad del Carmen, Isla del Carmen, Campeche.

R. g. pacificus Goodwin, 1932:2, see above.

DIAGNOSIS. Hall (1981) described the subgenus *Aporodon* as differing from the subgenus *Reithrodontomys* in "... that part of skull posterior to least interorbital constriction longer than anterior part; braincase elongate, large, greatly inflated, extending laterally beyond anterolateral limits of zygomatic arches; zygomatic plate narrower than mesopterygoid fossa; pterygoid hamulae well inflated, reflexed laterad, club-shaped from ventral aspect." *R. gracilis* differs from other members of the *R. mexicanus* group in that it is smaller in overall size, especially evident in the length of the hindfeet and tail, has shorter, generally paler pelage, and has a smaller skull with a less swollen braincase, shorter rostrum, and smaller auditory bullae (Hooper, 1952).

GENERAL CHARACTERS. The pelage of the slender harvest mouse is relatively short and the upperparts have a characteristically grizzled or "peppered" appearance. The dorsal ground color varies from pinkish cinnamon buff in *R. g. pacificus* (Goodwin, 1934) through bright ochraceous tawny in *R. g. anthonyi* (Anderson and Jones, 1960), to tawny in *R. g. gracilis* (Hooper, 1952). The color of underparts varies from white in *R. g. harrisi* (Goodwin, 1946) to bright orange cinnamon in *R. g. gracilis* (Hooper, 1952). The ears are blackish or brownish and sparsely haired. A lateral line may be present. The upper part of the forefoot and hindfoot are variable in color, ranging from white to dusky. Hooper (1952) stated that foot coloration may vary seasonally and geographically. No eye ring is present. The tail is slender, scaly, and scantily haired, and may be distinctly bicolored as in *R. g. harrisi*, fuscous above and white below (Goodwin, 1946), to uniform clove brown in *R. g. pacificus* (Goodwin, 1932).

The skull (Fig. 1) is relatively small, and the braincase relatively flat. The auditory bullae are small. The zygomata are broad and squarish. The incisive foramina are short, the palate is long. The frontals are exceptionally broad and flat interorbitally (Goodwin, 1932, 1946; Hall, 1981; Hooper, 1952; Jones, 1964). The rostrum varies from long and broad in *R. g. insularis* (Jones, 1964)

to short and broad in *R. g. pacificus* (Hooper, 1952). The upper incisors are strongly recurved (Hooper, 1952).

Selected average (and extreme) external and cranial measurements (mm) of six adults of the largest subspecies of the species, *R. g. anthonyi*, from El Salvador and Guatemala (Anderson and Jones, 1960), followed by those of eight adults of one of the smallest subspecies, *R. g. harrisi*, from Nicaragua (Jones and Genoways, 1970), are: total length, 183.6 (170 to 198), 168.1 (163 to 173); length of tail, 106.0 (95 to 113), 99.4 (93 to 108); length of



FIGURE 1. Dorsal, ventral, and lateral views of cranium, and lateral view of lower jaw of *Reithrodontomys gracilis gracilis* (KU 93702, ♀) from 66 km NE Mérida, Yucatán. Greatest length of skull is 19.6 mm.

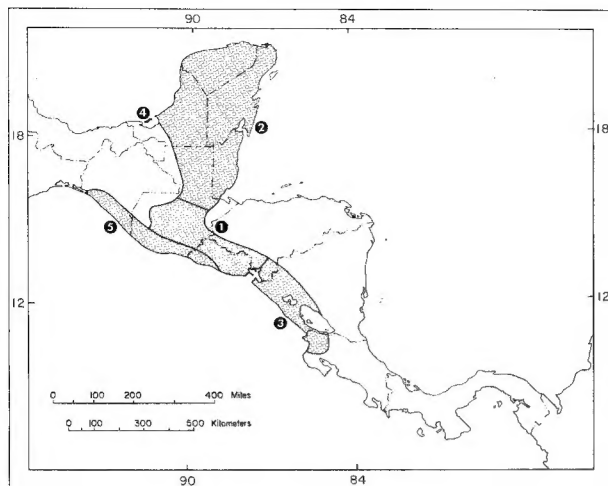


FIGURE 2. Distribution of *Reithrodontomys gracilis* modified after Hall (1981). Subspecies are: 1, *R. g. anthonyi*; 2, *R. g. gracilis*; 3, *R. g. harrisi*; 4, *R. g. insularis*; 5, *R. g. pacificus*.

hindfoot, 18.0 (18), 18.1 (17 to 19); length of ear from notch, 14.0 (14), 13.8 (13 to 15); greatest length of skull, 22.2 (21.4 to 22.8), 21.3 (20.3 to 22.6); zygomatic breadth, 11.2 (10.9 to 11.7), 10.8 (10.5 to 11.1); breadth of braincase, 10.9 (10.3 to 11.4), 10.4 (9.8 to 11.0); depth of skull, 8.4 (8.0 to 9.0), 8.1 (7.7 to 8.7); length of rostrum, 7.6 (7.3 to 7.8), 7.2 (6.8 to 7.6); breadth of rostrum, 4.2 (4.0 to 4.6), 3.7 (3.5 to 4.0); interorbital constriction, 3.8 (3.6 to 4.0), 3.6 (3.3 to 3.8); length of incisive foramen, 4.1 (3.8 to 4.3), 3.6 (3.3 to 3.9); length of maxillary toothrow, 3.3 (3.1 to 3.4), 3.0 (2.8 to 3.1). Weight of the specimens of *R. g. anthonyi* averaged 14.3 g (12 to 17); three individuals, two males and a female, of *R. g. harrisi* weighed 11.1, 14.6, and 11.7 g, respectively.

DISTRIBUTION. The general distribution of *R. gracilis* is from the Yucatán Peninsula southward intermittently through the arid interior valleys and adjacent areas of Guatemala and western Belize to the Pacific coastal lowlands, thence westward to southern Chiapas and southeastward through El Salvador, adjacent Honduras, and the western third of Nicaragua to northwestern Costa Rica (Fig. 2). Altitudinally the species is known to range from sea level to about 1,370 m (Anderson and Jones, 1960; Burt and Stirten, 1961; Englert, 1959; Goodwin, 1946; Hooper, 1952; Jones and Genoways, 1970).

Reithrodontomys gracilis insularis is known only from Isla del Carmen (Jones, 1964). Hooper (1952) noted that the geographic range of *R. g. gracilis* "... is probably highly discontinuous, particularly in the basal part of the Yucatan Peninsula where vegetation is predominantly quasi rain forest."

FOSSIL RECORD. Hatt et al. (1953) found limb bones of a small harvest mouse, possibly *R. gracilis*, in Recent and late Pleistocene deposits in Yucatán caves.

ONTOGENY AND REPRODUCTION. Little is known of reproduction and development in these mice. Anderson and Jones (1960) reported two fetuses (crown-rump length 18 mm) from a female taken on 6 March in Guatemala and four (crown-rump 10 mm) from one taken on 29 July in El Salvador. On the Yucatán Peninsula, including Isla del Carmen (Jones et al., 1974), pregnant females were collected in July (three with three fetuses and one with four, crown-rump range 4 to 18 mm) and on 15 August (three fetuses, crown-rump 15 mm). Jones and Genoways (1970) reported three females taken in July in Nicaragua as carrying three, three, and four fetuses (crown-rump range 3 to 5 mm).

Adult males captured in Nicaragua (Jones and Genoways, 1970) on 29 June and 9 July each had testes that measured 10 mm in length. Three adults from the Yucatán Peninsula (Jones et al., 1974) had testes measuring 8 mm (5 April), 11 mm (4 June), and 9 mm (25 July) long. Of 25 specimens collected on 10 June from Isla del Carmen, Campeche, only 2 were juveniles (Jones et al., 1974). Hatt (1938) reported a juvenile taken in October at Chichén-

Itzá, Yucatán. Based on these anecdotal data, the reproductive season in *R. gracilis* appears to extend at least from late winter through spring and summer to mid-autumn.

Hooper (1952) described the subadult pelage of individuals of *R. g. gracilis* taken in February and March as similar to that of adults, but with paler upperparts. A juvenile captured in October was characterized by him as having grayish-brown upperparts. He further described its color as: "Ears brown, densely clothed with long black hairs. Wrists and ankles dusty, the remainder of the forefeet and hind feet white. Tail monochrome. Eye ring absent. Underparts dingy white, the white tips of the hairs not concealing the basal plumbeous bands."

ECOLOGY. The slender harvest mouse generally occurs in semiarid and arid areas with moderate to heavy ground cover, but occupies a wide range of habitats. It was found in open tropical evergreen and deciduous forests (some second growth), dry pine ridges, scrub and thorn forests, along edges of cultivated fields and marshes, in coconut groves, cafetals, and orchards, in acacia savanna, and in cactus-studded desert areas (Goodwin, 1932, 1934; Hatt and Villa-R., 1950; Hooper, 1952; Jones, 1964; Jones and Genoways, 1970). Nowhere were these mice reported to be common; there are, however, no published estimates of population densities. *R. gracilis* is somewhat scansorial and specimens were collected from trees and bushes, vines, rock walls, cactus hedges, in the rafters of man-made structures, and among logs and roots in forested areas (Hooper, 1952; Jones, 1964; Jones and Genoways, 1970; Jones et al., 1974).

Mammals found in association with *R. g. gracilis* on the Yucatán Peninsula as reported by Jones et al. (1974) are: *Heteromys gaumeri*, *Oryzomys palustris*, *Ototylomys phyllotis*, *Peromyscus leucopus*, *Peromyscus yucatanicus*, and *Sigmodon hispidus*. *R. g. anthonyi* was reported by Goodwin (1934) to be associated with *Baiomys* and *Neotoma* in grass among clumps of cactus and thorny shrubs at Sacapulas, Guatemala. Jones (1964) reported *R. g. insularis* and *Mus musculus* taken together in a coco plantation on Isla del Carmen. At San Antonio, Nicaragua, *Didelphis marsupialis*, *Marmosa mexicana*, *Liomys salvini*, *Oryzomys couesi*, *Nyctomys sumichrasti*, *Ototylomys phyllotis*, *Peromyscus gymnotis*, *Sigmodon hispidus*, and *Coendou mexicanus* were collected in the same riparian habitat with *R. g. harrisi* (Jones and Genoways, 1970). Hooper (1952) stated that *R. gracilis* and *R. fulvescens* sometimes occur together in semiarid and arid areas.

REMARKS. No published information on the genetics of *R. gracilis* is available, nor are there extant data on diseases, parasites, predators, population structure, behavior, and some other aspects of the natural history of this species.

LITERATURE CITED

- Allen, J. A., and F. M. Chapman. 1897a. On mammals from Yucatan, with descriptions of new species. Bull. Amer. Mus. Nat. Hist., 9:1-12.
- 1897b. On a collection of mammals from Jalapa and Las Vegas, state of Vera Cruz, Mexico. Bull. Amer. Mus. Nat. Hist., 9:197-208.
- Anderson, S., and J. K. Jones, Jr. 1960. Records of harvest mice *Reithrodontomys*, from Central America, with description of a new subspecies from Nicaragua. Univ. Kansas Publ., Mus. Nat. Hist., 9:521-529.
- Burt, W. H., and R. A. Stirten. 1961. The mammals of El Salvador. Misc. Publ. Mus. Zool., Univ. Michigan, 117:1-69.
- Englert, D. C. 1959. First records of two species of harvest mice in Nicaragua. Southwestern Nat., 4:153.
- Goodwin, G. C. 1932. Three new *Reithrodontomys* and two new *Peromyscus* from Guatemala. Amer. Mus. Novitates, 506:1-5.
- 1934. Mammals collected by A. W. Anthony in Guatemala, 1924-1928. Bull. Amer. Mus. Nat. Hist., 68:1-60.
- 1945. Four new rodents from Costa Rica. Amer. Mus. Novitates, 1293:1-3.
- 1946. Mammals of Costa Rica. Bull. Amer. Mus. Nat. Hist., 87:271-473.
- Hall, E. R. 1981. The mammals of North America. Second ed. John Wiley and Sons, New York, 2:601-1181 + 90.
- Hatt, R. T. 1938. Notes concerning mammals collected in Yucatan. J. Mamm., 19:333-337.

- Hatt, R. T., and B. Villa-R. 1950. Observaciones sobre algunos mamíferos de Yucatán y Quintana Roo. An. Inst. Biol., México, 21:215-240.
- Hatt, R. T., H. I. Fisher, D. A. Langebartel, and G. W. Brainerd. 1953. Faunal and archeological researches in Yucatan caves. Bull. Cranbrook Inst. Sci., 33:1-119.
- Hooper, E. T. 1952. A systematic review of the harvest mice (genus *Reithrodontomys*) of Latin America. Misc. Publ. Mus. Zool., Univ. Michigan, 77:1-225.
- Howell, A. H. 1914. Revision of the American harvest mice (genus *Reithrodontomys*). N. Amer. Fauna, 36:1-97.
- Jones, J. K., Jr. 1964. A new subspecies of harvest mouse, *Reithrodontomys gracilis*, from Isla del Carmen, Campeche. Proc. Biol. Soc. Washington, 77:123-124.
- Jones, J. K., Jr., and H. H. Genoways. 1970. Harvest mice (genus *Reithrodontomys*) of Nicaragua. Occas. Papers Western Found. Vert. Zool., 2:1-16.
- Jones, J. K., Jr., H. H. Genoways, and T. E. Lawlor. 1974. Annotated checklist of mammals of the Yucatan Peninsula, Mexico. II. Rodentia. Occas. Papers Mus., Texas Tech Univ., 22:1-24.
- Spencer, S. R., and G. N. Cameron. 1982. *Reithrodontomys fulvescens*. Mamm. Species, 174:1-7.
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